

REMARKS

Reconsideration and allowance of the present application are respectfully requested. Claims 2-6, 8-18 and 20-29 remain pending in the application. By the foregoing amendment, claims 1, 7 and 19 have been canceled. New claims 30-33 have been added. Support for features recited in new claims 30-33 appears in the specification at, for example, paragraphs [0022] - [0035] and in original claims 1, 7 and 19.

In numbered paragraph 1 on page 2 of the Office Action, the Examiner has identified claims 1-3, 6-7, 9, 11-12, 14-15, 19-21, 24-25 and 28-29 as reading on the elected species. It is unclear why various claims of Species A in Group I, which were elected in Applicants' response filed March 19, 2003, were withdrawn from consideration by the Examiner, and clarification is requested. Despite this, generic claims are considered allowable for reasons set forth herein. Upon an indication of the allowability of these claims, it is requested that all non-elected claims be indicated allowable in the present application.

In numbered paragraph 2 on page 2 of the Office Action, a minor objection was raised with respect to the specification. By the foregoing amendment, this objection has been addressed such that its withdraw is requested.

In numbered paragraph 4 of the Office Action, claims 1-3, 6-7, 11-12, 14-15, 19-20, 24-25 and 28-29 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,492,315 (Maruyama et al). In numbered paragraph 5 on page 3 of the Office Action, claims 19-21, 24-25 and 28 are rejected under 35 U.S.C. §102(b) as being

anticipated by PCT document WO 00/40425 (Scholta). These rejections are respectfully traversed.

By the foregoing amendments, independent claims 1 and 19 have been canceled. New independent claims 30 and 32 have been submitted. New claim 30 generally corresponds to original claim 7 in independent form, but slightly amended to be somewhat broader in coverage than original claim 7. New claim 32 generally corresponds to independent claim 19, but has been amended to clarify the punching feature recited therein. These two independent claims, along with independent claim 29, are patentably distinct over the Maruyama and Scholta documents.

The present invention relates to a binding system for creating documents with sheet-wise formation of document features, such as tabs and finger indices. Referring to Figure 1, an exemplary embodiment is illustrated wherein a sheet 100 is passed along a sheet transport path to a punch 102 used to form a feature, such as a tab 110. The punch 102 punches material 112 at a first side of tab 110, after which the punch 102 is moved in a direction substantially parallel to an edge of the sheet (that is, the Y direction of Figure 1) to punch material 114 at a second side of tab 110. As described in paragraph [0023] on specification page 6, the punching operation can be performed once the sheet has been positioned at a desired punch position in the sheet transport path by a precision paper drive 30.

Thus, the sheet 100 can be moved in an X direction substantially perpendicular to the edge on which the tab is to be formed, and the punch 102 can be moved in a Y

direction substantially parallel to the edge. Relative motion of the punch and sheet in the X direction locates the paper so that the cutting edge of the paper 102 is at a specified location to form an edge of the finished document with a desired depth. Relative motion of the punch and sheet in the Y direction locates the tab and allows the punch to move to both sides of the tab 110 for punching the sheet material at both sides of the tab. As described in paragraph [0025], the punch, the sheet transport path, and associated sheet advancing mechanisms 130 are controlled by a controller 120. The controller 120 is programmed with the information about the sheet numbers which are selected to receive the tabs, and locations of the tabs on the sheets.

Exemplary embodiments of the present invention provide an ability to control the sheet transport path and the punch so that a feature, such as a finger index, can be formed at a variable depth (i.e., at different locations and dimensions along the X direction of Figure 1). As such, relatively complex indexing features can be formed in an assembly of sheets. Referring, for example, to Figures 4, 5 and 6 of the present application, an index cavity 410a, 410b, 410c can be formed within successive sheets at positions whereby a gradually changing amount of sheet material is removed in the X direction. See also the finger index 510 of Figure 5 and the sawtooth index 610 of Figure 6.

The ability to control both the sheet transport path and the punch in accordance with exemplary embodiments of the present invention is broadly encompassed by independent claims. For example, claim 30 recites, among other features, a controller programed to control the sheet transport path and the punch. Claim 30 recites that the controller controls

the sheet transport path to locate and punch a feature, such as a finger index, at a varying depth, in a direction substantially parallel to the sheet transport path, on different pages of a finished document.

Independent claim 32 recites, among other features, punching at least one of the sheets with the punch to form a feature according to a punching schedule by controlling a sheet transport path and the punch to punch the feature at a variable depth in a direction substantially perpendicular to an edge of the sheet on which the feature is to be formed.

Independent claim 29 recites, among other features, a controller programmed to control the sheet transport path and the trimmer to trim the edges of the sheets at a varying location according to a trim schedule to create a sawtooth edge feature.

Such features are neither taught nor suggested by the Maruyama and Scholta documents. The Maruyama document is directed to a sheet post-treatment apparatus having a tab trimmer 54 (see Figure 30). The tab trimmer can provide each of multiple sheets with a tab as shown in Figure 31. Referring to Figure 33, the tab trimmer includes inlet rollers 401 and a skew-feed roller 402 for transferring a sheet P until it abuts against a retardable stopper 404. The transfer sheet P is cut by replaceable cutter blades 406a and 407a removably attached to cutter supports 406, 407 shiftable in a direction shown by arrow 405x, to form a tab in the transfer sheet. After the cutting, the stopper 404 is retarded below the paper guide 408 and the transfer sheet is conveyed by roller 402 and outlet rollers 409 (see column 6, line 56 through column 7, line 3). Note that all of the tabs shown in Figure 31 are formed of similar depth in a direction perpendicular to an edge

of the sheet on which the feature is to be formed and parallel to the transport direction of the sheet, because the sheet is placed in a fixed relationship with regard to the retardable stopper 404.

The Maruyama patent therefore fails to teach or suggest an ability to vary the tab depth in a direction which is perpendicular to an edge of the sheet on which the feature is to be formed and parallel to the transport direction of the sheet. To the contrary, because location of the retardable stop 404 is fixed in the direction of sheet transport, the Maruyama patent teaches away from any ability to vary the depth of any tab created in different sheets supplied to the tab trimmer 54. The system of the Maruyama patent is therefore incapable of creating the saw tooth edge feature recited in claim 29. As such, independent claims 29, 30 and 32 are allowable over the Maruyama patent.

The Scholta document is directed to a gather-stitcher machine 15 which can automatically produce a header index for magazines 10 which have been joined by the gather-stitcher machine. As described in the Abstract of this document, the edge punching device provided punches piles of sheets 16 on longitudinal edges thereof when the sheets have been put into place. Figure 4 of this document shows various edge configurations produced by the machine 15. However, the English language portion of this document and the Figures included therein, provide no teaching or suggestion that the dimension of any feature created in a direction perpendicular to an edge of the sheet, can be varied in a manner as described above. As such, this document is considered no more relevant to the

presently claimed invention than the Maruyama patent, and independent claims 29, 30 and 32 are considered allowable.

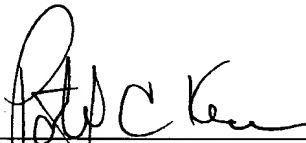
All the remaining claims depend from independent claims 29, 30 and 32 and, for reasons similar to those described herein, are considered allowable. In addition, the dependent claims recite additional advantageous features which further distinguish over the Maruyama patent and the Scholta document.

All rejections and objections raised in this Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and a Notice of Allowance is respectfully solicited.

Respectfully submitted,

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